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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,737	06/24/2005	Nobuo Ando	03702/0203075-US0	2400

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EXAMINER
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YANCHUK, STEPHEN J

ART UNIT	PAPER NUMBER
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4131

MAIL DATE	DELIVERY MODE
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01/30/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,737	<b>Applicant(s)</b> ANDO ET AL.	
	<b>Examiner</b> STEPHEN YANCHUK	<b>Art Unit</b> 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/24/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |



Cathode output terminal that extends from the cathode of the battery main body to the outside (104) [Paragraph 40];

Anode output terminal that extends from the cathode of the battery main body to the outside (106) [Paragraph 40];

Case (storage body) (101) [Paragraph 40] [Figure 1].

The resin material is used to seal the battery where the case is exposed (105 Figure 5) [Paragraph 40].

The cathode comprises an active layer that is capable of taking lithium therein and releasing said lithium, which is insoluble in and stable against an electrolyte solution which makes the battery rechargeable (reversible) [Paragraph 67-72]. These active materials contain lithium such as  $\text{LiMnO}_2$  [Paragraph 67-72].

The anode comprises an active material capable of taking lithium therein and releasing said lithium and which is insoluble in and stable against an electrolyte solution which makes the battery rechargeable (reversible) [Paragraph 73-78]. Examples of such are lithium alloys such as Al-Li [Paragraph 73-78] or amorphous carbon and graphite [Paragraph 73-78]. Binders can be used as a base for the active material to make the layer insoluble in and stable against an electrolyte solution; examples are fluororesins such as poly(vinylidene fluoride), tetrafluoroethylene, cellulose, and polyvinyl materials [Paragraph 73-78].

Kawakami is silent as to the capacitance per unit weight of the electrodes. However, the cathode structure and cathode composition of the reference are identical

Art Unit: 4131

to the presently claimed structure and composition. Therefore, the claimed capacitance per unit weight of electrode is presumed to be inherent to the electrode of the reference.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al. (EP 1089362) as applied to claim 1 above, and further in view of Yata (USPAT 4,615,960).

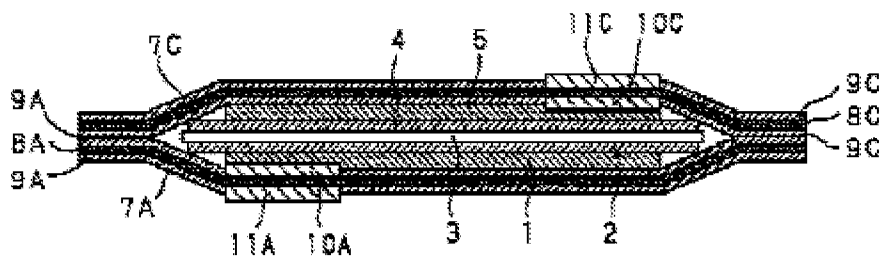
As noted above, Kawakami anticipates claim 1. Kawakami fails to teach a negative electrode having a base of polyacene skeletal structure which will allow the negative capacitance to be over three times larger than the positive active material as well as weight.

Yata teaches an insoluble and infusible substrate with polyacene-type skeletal structure having a hydrogen/carbon atomic ratio of from 0.05-0.6 [Abstract]. It would have been obvious to combine the teaching of Yata with Kawakami because Yata teaches a novel electrode treatment [Col 3 Ln 25], a material that exhibits excellent oxidation stability in addition to having electrical conductivity of a semiconductor [Col 3

Art Unit: 4131

Ln 35], as well as a material that is to provide a secondary cell which is easy to build in small size or thickness [Col 3 Ln 63].

4. Claims 1, and 10-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroyuki (JP 09-063550) and in view of Yata (USPAT 4,615,960).

【☒ 1】

*Hiroyuki Figure 1*

Hiroyuki teaches a battery comprising of:

Electrode (1, 5);

Electrolyte Materials (2, 5);

Battery enclosure enclosing all inside (Storage Body) (7A, 7C);

Resin Layers (9A, 9C);

Inside lead (10A, 10C);

Outside lead (outside terminal located at non-sealed portions connected to the inside leads) (11A, 11C) [Figure 1].

The outside lead penetrates the enclosure.

Art Unit: 4131

The materials of the electrodes are taught to be lithium [Paragraph 7] with an active layer [Paragraph 27]. Hiroyuki fails to teach a negative electrode having a base of polyacene skeletal structure which will allow the negative capacitance to be over three times larger than the positive active material as well as weight.

Yata teaches an insoluble and infusible substrate with polyacene-type skeletal structure having a hydrogen/carbon atomic ratio of from 0.05-0.6 [Abstract]. It would have been obvious to combined the teaching of Yata with Hiroyuki because Yata teaches a novel electrode treatment [Col 3 Ln 25], a material that exhibits excellent oxidation stability in addition to having electrical conductivity of a semiconductor [Col 3 Ln 35], as well as a material that is to provide a secondary cell which is easy to build in small size or thickness [Col 3 Ln 63].

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN YANCHUK whose telephone number is (571)270-7343. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4131

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/  
Supervisory Patent Examiner, Art Unit 4131

/STEPHEN YANCHUK/  
Examiner, Art Unit 4131